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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
FORREST, MICHAEL	

ART UNIT	PAPER NUMBER
1793	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/567,433	SARE ET AL.	
	Examiner	Art Unit	
	MICHAEL FORREST	1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-52* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-52* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *09/08/2006*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claim 1-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bilimoria et al(US Patent 6,006,920) and in further view of Fanselow et al(US Patent 3,586,523) and further in view of Sare et al(US Patent Application Publication 2002/0088376).

Bilimoria teaches a method of producing kaolin pigments the method comprising the steps:

(1) providing a hydrous kaolin and

(2) subjecting the hydrous kaolin to enhanced magnetic separation.

Bilimoria does not teach that the kaolin is calcined after enhanced magnetic separation. Bilimoria also does not specifically teach that the kaolin pigments obtained have Hunter lab coordinate L of at least about 96.

Regarding calcination, Fanselow teaches a method of producing kaolin pigments where after refining steps the kaolin is calcined at a temperature of 1600 to 2300°F (871 to 1260°C) (see Col 4, Line 30 to Col 5, Line 14). Fanselow further teaches that calcination increases the brightening and opacifying properties (see Col 5, Lines 35 to 49). It would have been obvious to one of ordinary skill in the art at the time of the invention to perform the method of producing kaolin pigments as taught by Bilimoria with the added step of calcination at a temperature in the range of 1600 to 2300°F (871 to 1260°C) (overlapping the claimed range of 500 to 1200°C) as taught by Fanselow to improve the brightening and opacifying properties of the product. The use of a well known technique to improve a similar method and product supports a conclusion of obviousness.

Regarding Hunter lab coordinate of at least 96, Sare '376 teaches a method of producing kaolin pigments, the method including the step of calcination and producing kaolin having L of 96.8 (see Page 7, Examples 1 and 2, and Table 3). The products and methods taught by Bilimoria, Fanselow, and Sare '376 have similar purpose as pigment in paper. It would have been obvious to one of ordinary skill in the art at the time of the invention to perform the method of producing kaolin as taught by Bilimoria including the step of calcination as taught by Fanselow to produce kaolin with L value of 96.8 as taught by Sare '376 to produce a pigment with a desired whiteness for use in paper manufacturing.

Regarding Claim 2, Bilimoria further teaches a method where the brightness of the kaolin pigment is 90.97 (see Col 8, Example 1). Sare '376 further teaches a method where the kaolin pigment has brightness of 92.8 when measured with a Technibrite TB-1C instrument (see Page 7, Example 1 and Table 3).

Regarding Claim 3, Bilimoria further teaches a method where the brightness of the kaolin pigment is 90.97 (see Col 8, Example 1). Sare '376 further teaches a method where the kaolin pigment has brightness of 92.8 when measured with a Technibrite TB-1C instrument (see Page 7, Example 1 and Table 3).

Regarding Claim 4, Sare '376 teaches a method where the kaolin has an L value of 96.8 (see Page 7, Examples 1 and 2, and Table 3). Biliamoria and Fanselow and Sare '376 do not specifically teach a method to produce kaolin having L value of at least 97.

Each of the prior art reference teach that the kaolin is usable as pigment in paper and paper coatings. It would have been obvious to one of ordinary skill in the art at the time of the invention to increase the whiteness of the final product to a desired L value such as 97 motivated by desired optical property as paper pigmentation. Also, Sare teaches producing kaolin having L of 96.8 which is “at least about 97" as claimed(see Page 7, Examples 1 and 2, and Table 3).

Regarding Claim 5, Bilimoria teaches a method where the starting clay is provided as an aqueous clay slurry (see Col 3, Lines 31 to 34).

Regarding Claim 6, Bilimoria teaches a method where the slurry comprises a magnet enhancer reagent (see Col 3, Lines 31 to Col 4, Line 36).

Regarding Claim 7, Bilimoria teaches a method where the magnet enhancer reagent is a metal oxide or combined metal oxide (see Col 3, Line 59 to Col 4, Line 29).

Regarding Claims 8-9, Bilimoria teaches a method where the magnet enhancer reagent comprises an iron oxide coated with a surface active agent (see Col 3, Line 59 to Col 4, Line 29).

Regarding Claim 10, Bilimoria teaches a method where the high shear is imparted to the clay slurry with the magnet enhancer reagent achieved by a rotor blade tip speed of at least 50 feet per second and no adverse effects on the clay quality are incurred (see Col 4, Line 37 to 59).

Regarding Claim 11, Bilimoria teaches a method where the magnet enhancer reagent is at 5% activity (see Col 4, Lines 30-36).

Regarding Claims 12-13, Bilimoria teaches a method where the clay is degritted, or blunged before performing the magnetic separation method (see Col 5, Line 46 to Col 6, Line 3).

Regarding Claims 14, Fanselow teaches a method where the kaolin is fully calcined (see Col 4, Line 67 to Col 5, Line 35).

Regarding Claim 15, Sare '376 teaches a method where the kaolin is flash calcined (see Para 0117 to Para 0119).

Regarding Claims 16 to 20, Fanselow teaches a method where the kaolin is calcined at a temperature of 1600 to 2300°F (871 to 1260°C), which overlaps or encompasses the claimed ranges(see Col 4, Line 30 to Col 5, Line 14). Sare '376 teaches a method where the kaolin is calcined at a temperature from 500 to 1200°C, preferably 800 to 1200°C (see Para 0117). Differences from the prior art only in concentration or temperature support the finding of a prima facie case of obviousness unless there is evidence indicating such concentration or temperature is critical. See MPEP 2144.05(II)(A). Here, applicant discloses multiple ranges that overlap with the prior art range that overlaps with the prior art ranges. It would have been prima facie obvious to one of ordinary skill in the art at the time of the invention to improve upon the known calcination temperatures to determine optimum or workable range. Applicants can rebut a prima facie case of obviousness based on optimization of ranges by showing the criticality of the claimed range.

Regarding Claim 21 and 22, as applied to claim 1, Biliamoria in view of Fanselow and Sare teach a method of producing kaolin where the kaolin is refined by an

enhanced magnetic separation and then calcined at a temperature of 1600 to 2300°F and where the kaolin has an L value of at least 96.8.

Biliamoria and Fanselow and Sare '376 do not specifically teach a method to produce kaolin having L value of at least 97.5 or 98.

The prior art references each teach kaolin that is to be used as pigment in paper and paper coatings. It would have been obvious to one of ordinary skill in the art at the time of the invention to increase the whiteness of the pigment to a desired L value such as 97.5 or 98 motivated by desired optical property as paper pigmentation.

Regarding Claim 23, Bilimoria teach a calcined kaolin prepared by the method.

Regarding Claim 24, Bilimoria teaches a composition formed from magnetically separated hydrous kaolin.

Bilimoria does not teach that the composition is calcined or has Hunter lab coordinate L value of at least about 96.

Fanselow teaches a kaolin where after refining steps the kaolin is calcined at a temperature of 1600 to 2300°F (see Col 4, Line 30 to Col 5, Line 14). Fanselow further teaches that calcination increases the brightening and opacifying properties (see Col 5, Lines 35 to 49). It would have been obvious to one of ordinary skill in the art at the time of the invention to produce kaolin pigments as taught by Bilimoria with the added step of calcination as taught by Fanselow to improve the brightening and opacifying properties of the product. The use of a known technique to improve a similar method or product supports a conclusion of obviousness.

Regarding Hunter lab coordinate of at least 96, Sare ‘376 teaches a kaolin having L of 96.8 (see Page 7, Examples 1 and 2, and Table 3). The kaolin taught by Sare '376 shares the same purpose as the kaolin taught by Bilimoria as brightening and opacifying pigments. It would have been obvious to one of ordinary skill in the art at the time of the invention to produce the kaolin as taught by Bilimoria with a Hunter lab coordinate L of 96.8 as taught by Sare ‘376 to provide the whiteness desired in a pigment.

Regarding Claim 25, Bilimoria further teaches kaolin where the brightness is 90.97 (see Col 8, Example 1). Sare ‘376 further teaches kaolin that has brightness of 92.8 when measured with a Technibrite TB-1C instrument (see Page 7, Example 1 and Table 3).

Regarding Claim 26, Sare ‘376 further teaches kaolin that has brightness of 92.8 when measured with a Technibrite TB-1C instrument (see Page 7, Example 1 and Table 3).

Regarding Claim 27, Sare ‘376 teaches kaolin that has an L value of 96.8 (see Page 7, Examples 1 and 2, and Table 3). L value of 96.8 is “at least about 97" as claimed. Biliamoria and Fanselow do not specifically teach a method to produce kaolin having L value of at least about 97.

Each of the prior art reference teach that the kaolin is usable as pigment in paper and paper coatings. It would have been obvious to one of ordinary skill in the art at the time of the invention to increase the whiteness of the final product to a desired L value such as 97 motivated by desired optical property as paper pigmentation.

Regarding Claim 28, Sare '376 further teaches a kaolin that has brightness of 92.8 when measured with a Technibrite TB-1C instrument (see Page 7, Example 1 and Table 3).

Regarding Claim 29, Fanselow teaches a kaolin that is fully calcined (see Col 4, Line 67 to Col 5, Line 35).

Regarding Claim 30, Sare '376 teaches a kaolin that is partially calcinated and in the form of metakaolin (see Para 0118)

Regarding Claim 31, Sare '376 teaches a kaolin that is flash calcined (see Para 0117 to Para 0119).

Regarding Claim 32, Sare '376 teaches a kaolin suited for use in paint compositions (see Para 0008).

Regarding Claim 33, Sare '376 teaches a kaolin suited for use in plastics (see Para 0008).

Regarding Claim 34, Sare '376 teaches a kaolin suited for use in ceramic products (see Para 0008).

Regarding Claim 35 and 36, Sare '376 teaches a kaolin suited for use in paper coatings (see Para 0008).

Regarding Claim 37 and 38, Sare '376 teaches a kaolin suited for use in paper products (see Para 0008).

Regarding Claim 39 and 40, Sare '376 teaches a kaolin suited for use in cementious products (see Para 0008).

Claim 41-52 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sare et al(US Patent Application Publication 2002/0088376).

Sare '376 teaches a calcined kaolin where "calcined" encompasses partial(meta) (see Para 0118). Sare '376 further teaches in example, calcined kaolin where the kaolin has a whiteness of 96.8 on the Hunter lab coordinate scale (see Example 1 and Table 3).

Sare '376 does not specifically teach that partially calcined kaolin produced by the taught method would have a whiteness of at least 96 on the Hunter lab coordinate scale.

The calcined kaolin taught by Sare '376 has utility as pigments in coatings and products. It would have been obvious to one of ordinary skill in the art at the time of the invention to produce partially calcined kaolin with the same whiteness as the calcined kaolin in example 1 for desired optical properties as a whitening pigment.

Regarding Claim 42, Sare '376 further teaches calcined kaolin that has brightness of 92.8 as measured by a Technibrite TB-1C instrument (see Example 1 and Table 3).

Regarding Claim 43, Sare '376 does not specifically teach a calcined kaolin having whiteness L of at least about 97.

The compositions taught by the prior art is used as pigment particularly in paper manufacturing. It would have been obvious to one of ordinary skill in the art at the time of the invention to produce a kaolin as taught by Sare '376 with an increased L value to achieve a desired whiteness in a composition used for pigmentation. Also Sare teaches

producing kaolin having L of 96.8 which is “at least about 97" as claimed (see Page 7, Examples 1 and 2, and Table 3).

Regarding Claim 44, Sare ‘376 teaches a kaolin suited for use in paint compositions (see Para 0008).

Regarding Claim 45, Sare ‘376 teaches a kaolin suited for use in plastics (see Para 0008).

Regarding Claim 46, Sare ‘376 teaches a kaolin suited for use in ceramic products (see Para 0008).

Regarding Claim 47 and 48, Sare ‘376 teaches a kaolin suited for use in paper coatings (see Para 0008).

Regarding Claim 49 and 50, Sare ‘376 teaches a kaolin suited for use in paper products (see Para 0008). Sare ‘376 further teaches that the kaolin is used as filler (see Para 0002).

Regarding Claim 51 and 52, Sare ‘376 teaches a kaolin suited for use in cementious products (see Para 0008). Sare ‘376 further teaches that the kaolin is used in coating compositions (see Para 0002).

Conclusion

Claims 1-52 are pending. Claims 1-52 are rejected. No claims are allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MICHAEL FORREST whose telephone number is

(571)270-5833. The examiner can normally be reached on Monday - Thursday, 9:00am - 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Curtis Mayes can be reached on (571)272-1234. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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1/7/2009

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